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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,696	10/28/2003	Kyu-Wook Han	SAM-0512	3675

7590

02/10/2006

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EXAMINER

FRANKLIN, RICHARD B

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/694,696	Applicant(s) HAN, KYU-WOOK	
	Examiner Richard Franklin	Art Unit 2181	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 25 have been examined.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S710 (Figure 7), S904 (Figure 9). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claims 1 – 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the packet memory" in Page 29 Line 5. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has assumed that Applicant intended to recite "a packet memory" which refers to a new packet memory. Also in making this assumption, the Examiner assumes that the packet memory of Page 26 Line 6 is the same packet memory of Page 29 Line 5.

Claim 7 recites the limitation "the packet memory" in Page 31 Line 3. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has assumed that Applicant intended to recite "a packet memory" which refers to a new packet memory. Also in making this assumption, the Examiner assumes that the packet memory of Page 31 Line 4 is the same packet memory of Page 31 Line 3.

Claim 10 recites the limitation "the predetermined critical value" in Page 32 Lines 7 and 8. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has assumed that Applicant intended to recite "the predetermined limit value," referring to the "predetermined limit value" of Claim 7.

Claim 10 recites the limitation "a first signal" and "a second signal" in Page 32 Lines 6 and 7. There is insufficient antecedent basis for this limitation in the claims. It is not clear if the first and second signals are referring to the first and second signals recited previously in claim 10 or a new set of signals.

The Examiner has assumed the limitation is referring to the first and second signal that has already been recited previously in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 – 5, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Krishna US Patent No. 6,981,054 (hereinafter Krishna).

As per claim 1, Krishna teaches determining priority data of a packet received by one of a plurality of ports (Col 4 Lines 47 – 53, Col 5 Lines 38 – 44); determining whether an address pointer of a packet memory exceeds a predetermined limit value by monitoring the packet memory (Col 5 Lines 18 – 22); selecting a port to control packet flow by using the priority data when the address pointer of the packet memory exceeds

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the predetermined limit value (Col 4 Lines 24 – 29, Col 5 Lines 48 – 58); and directing the selected port to control packet flow (Col 5 Lines 48 – 58).

As per claim 2, Krishna also teaches determining that the priority data is designated to the packet (Col 3 Lines 37 – 41, Col 5 Lines 38 – 44); determining that the packet is a VLAN packet (Col 3 Lines 43 – 47); and determining the priority by reading the priority field of the packet (Col 3 Lines 37 – 41).

As per claim 3, Krishna also teaches wherein the priority is determined as a high priority when the priority of the packet is over a critical value and the priority is determined as low when the priority of the packet is under a predetermined critical value (Figure 2 Item 40).

As per claim 4, Krishna also teaches selecting all ports having a low priority when the address pointer exceeds a first limit value (Figure 2 Item 42 [T1]) and selecting all the ports when the address pointer exceeds a third limit (Figure 2 Item 42 [T3]) value that is higher than the first limit value (Col 5 Line 45 – Col 6 Line 5).

As per claim 5, Krishna also teaches selecting a subset of ports having a low priority when the address pointer exceeds a first limit value (Figure 2 Item 42 [T1]); selecting all ports having the low priority and a subset of ports having a high priority when the address pointer exceeds a second limit value that is higher than the first limit

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value (Figure 2 Item 42 [T2]); and selecting all ports when the address pointer exceeds a third limit value that is higher than the second limit value (Figure 2 Item 42 [T3], Col 5 Line 45 – Col 6 Line 5).

As per claim 15, Krishna teaches a plurality of port control units that are coupled to a plurality of ports for determining priority data of a packet received by a port (Figure 1 Item 24, Col 4 Lines 47 – 53, Col 5 Lines 38 – 44); and a queue manager for monitoring a state of a packet memory, and for selecting a port to direct flow control by using the priority data determined by the port control units when an address pointer of the packet memory exceeds a predetermined limit value (Figure 2 Item 30, Col 5 Lines 14 – 22).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krishna US Patent No. 6,981,054 (hereinafter Krishna).

As per claim 6, Krishna teaches selecting a subset of ports having the low or high priority (Krishna; Col 5 Line 45 – Col 6 Line 5).

Krishna does not teach wherein the selection method is a round robin method.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a round robin method in the selection of the ports because round robin selection methods are well known in the art as a common method used to give each item, in a set of items, time to operate.

6. Claims 7 – 14, 16 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishna US Patent No. 6,981,054 (hereinafter Krishna) in view of Kawakami et al. US Patent Application Publication No. 2002/0136163 (hereinafter Kawakami).

As per claim 7, Krishna teaches determining priority data of a packet received by one of a plurality of ports (Krishna; Col 4 Lines 47 – 53, Col 5 Lines 38 – 44); determining whether an address pointer of a packet memory exceeds a predetermined limit value by monitoring the packet memory (Krishna; Col 5 Lines 18 – 22); selecting a port to control packet flow by using the priority data when the address pointer of the packet memory exceeds the predetermined limit value (Krishna; Col 4 Lines 24 – 29, Col 5 Lines 48 – 58); and directing the selected port to control packet flow (Krishna; Col 5 Lines 48 – 58).

Krishna does not teach measuring bandwidth data of each port and outputting state data of each port by using the bandwidth data.

Kawakami teaches measuring bandwidth data of each port and outputting the state of the port by using the bandwidth data (Kawakami; Figures 18 and 19, Paragraphs [0194] – [0202]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Krishna to include measuring bandwidth data of each port and outputting the state of the port by using the bandwidth data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Krishna by those of Kawakami because measuring bandwidth data of each port and outputting the state of the port by using the bandwidth data allows for each port congestion to be judged separately (Kawakami; Paragraph [0194]).

As per claim 8, Kawakami also teaches counting the number of packets received by the port (Kawakami; Figure 18 [Rate count], Paragraph [0194]); calculating an average bandwidth by dividing the number of packets by a predetermined time period (Kawakami; Figure 18 [Total rate]); and outputting a first signal when the average bandwidth exceeds a predetermined critical value and a second signal when the average bandwidth does not exceed the predetermined critical value (Kawakami; Paragraph [0202]).

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As per claim 9, Krishna also teaches determining that the priority data is designated to the packet (Krishna; Col 3 Lines 37 – 41, Col 5 Lines 38 – 44); determining that the packet is a VLAN packet (Krishna; Col 3 Lines 43 – 47); and determining the priority by reading the priority field of the packet (Krishna; Col 3 Lines 37 – 41).

As per claim 10, Krishna also teaches outputting a first signal when the priority of the packet is over a critical value and a second signal when the priority is under a critical value (Krishna; Col 5 Lines 29 – 44).

As per claims 11 – 12, and 22 – 23, Krishna discloses a port filter (Krishna; Figure 1 Item 24) for performing the logic function of comparing attributes and outputting a port state signal (Krishna; Col 3 Lines 37 – 41).

Krishna does not explicitly specify using logic gates (AND / OR) for performing the digital logic function of the port filter.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an equivalent digital logic in order to carry out the intended function of the port filter due to the design simplicity and stability of the logic circuit since digital or binary logic is the basic idea of computer operation.

As per claims 13, 20, and 24, Krishna also teaches selecting all ports having a low priority when the address pointer exceeds a first limit value (Figure 2 Item 42 [T1])

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and selecting all the ports when the address pointer exceeds a third limit (Figure 2 Item 42 [T3]) value that is higher than the first limit value (Col 5 Line 45 – Col 6 Line 5).

As per claims 14, 21, and 25, Krishna also teaches selecting a subset of ports having a low priority when the address pointer exceeds a first limit value (Krishna; Figure 2 Item 42 [T1]); selecting all ports having the low priority and a subset of ports having a high priority when the address pointer exceeds a second limit value that is higher than the first limit value (Krishna; Figure 2 Item 42 [T2]); and selecting all ports when the address pointer exceeds a third limit value that is higher than the second limit value (Krishna; Figure 2 Item 42 [T3], Col 5 Line 45 – Col 6 Line 5).

As per claim 16, Krishna teaches determining the priority data of a packet received by one of a plurality of ports (Krishna; Col 4 Lines 47 – 53, Col 5 Lines 38 – 44); and requesting a selected port to control packet flow (Krishna; Col 5 Lines 48 – 58).

Krishna does not teach a bandwidth control section for measuring bandwidth data of a port.

Kawakami teaches measuring bandwidth data of each port (Kawakami; Figures 18 and 19, Paragraphs [0194] – [0202]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Krishna to include measuring bandwidth data of each port.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Krishna by those of Kawakami because measuring bandwidth data of each port allows for each port congestion to be judged separately (Kawakami; Paragraph [0194]).

As per claim 17, Kawakami also teaches counting the number of packets received by a port (Kawakami; Figure 18 [Rate count], Paragraph [0194]); calculating an average bandwidth by dividing the counted number by a predetermined time period (Kawakami; Figure 18 [Total rate], Paragraph [0196]); and determining whether the average bandwidth exceeds a predetermined critical value (Paragraph [0202]).

As per claim 18, Krishna also teaches determining that the priority data is designated to the packet (Krishna; Col 3 Lines 37 – 41, Col 5 Lines 38 – 44); determining that the packet is a VLAN packet (Krishna; Col 3 Lines 43 – 47); and determining the priority by reading the priority field of the packet (Krishna; Col 3 Lines 37 – 41).

As per claim 19, Krishna also teaches detecting whether the address pointer exceeds the limit value (Krishna; Col 5 Lines 48 – 58); directing the port in a predetermined state to control the packet flow when the address pointer exceeds the limit value (Krishna; Col 5 Lines 14 – 22); determining the state of the port by receiving output signal of the bandwidth control section and the priority outputting section

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(Krishna; Col 5 Lines 38 – 44); and selecting the port in a predetermined state according to the data output by the port state determining section and transmitting a flow control signal to the port control unit of the selected port in response to a flow control direction of the flow control directing section (Krishna; Col 5 Lines 14 – 22).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard Franklin
Patent Examiner
Art Unit 2181


KIM HUYNH
SUPERVISORY PATENT EXAMINER
2/2/06